217/785-1705

CONSTRUCTION PERMIT -- REVISED*
NSPS SOURCE

PERMITTEE

United States Steel Corporation - Granite City Works
Attn: Bryan Kresak, Environmental Director
600 Grant Street
Pittsburgh, Pennsylvania 15219

Application No.: 06070023 I.D. No.: 119813AAI
Subject: Cogeneration Boiler Project
Date Permit Originally Issued: January 30, 2008
Date Application for Revised Permit Received: June 19, 2014
Date Revised Permit Issued: July 31, 2014
Location: 1951 State Street, Granite City

This Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a blast furnace gas (BFG) fired cogeneration boiler, a flare, and cooling tower, as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

If you have any questions on this permit, please contact Minesh Patel at 217/785-1705.

Raymond E. Pilapil Date Signed: _____
Acting Manager, Permit Section
Division of Air Pollution Control

REP:MVP:psj

cc: Region 3
Lotus Notes
CES

* This revised permit provides for an increase in the permitted usage of natural gas by the Cogeneration Boiler for an additional 12 months (see Condition 3.1.6(a)(iii)). The Permittee applied for this revision to address a number of events that resulted in higher usage of natural gas by its Cogeneration Boiler, including extended outages of blast furnaces during extreme cold weather. This revised permit does not increase the permitted emissions of the Cogeneration Boiler.

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1.0 LIST OF ABBREVIATIONS AND ACRONYMS COMMONLY USED

BFG	Blast Furnace Gas
CAAPP	Clean Air Act Permit Program
CFR	Code of Federal Regulations
CO	Carbon Monoxide
dscf	Dry standard cubic feet
gr	Grains
HAP	Hazardous Air Pollutant
H_2SO_4	Sulfuric Acid
hr	Hour
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
Illinois EPA	Illinois Environmental Protection Agency
Lb	Pound
mg	Milligram
Mo	Month
mmBtu	Million British Thermal Units
MSSCAM	Major Stationary Sources Construction and Modification (35 Part IAC 203), also known as Nonattainment New Source Review (NA NSR)
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM_{10}	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods
$PM_{2.5}$	Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 microns as measured by applicable test or monitoring methods
ppm	Parts Per Million
PSD	Prevention of Significant Deterioration (40 CFR 52.21)
scf	Standard Cubic Feet
scm	Standard Cubic Meter
SO_2	Sulfur Dioxide
USEPA	United States Environmental Protection Agency
VOM	Volatile Organic Material
Yr	Year

2.0 OVERALL SOURCE CONDITIONS

2.1 General Applicable Provisions and Regulations

2.1.1 The new units being constructed as part of this project are subject to particular regulations as set forth in Section 3 (Unit-Specific Conditions for Specific Emission Units) of this permit.

2.1.2 In addition, these emission units are subject to the following regulations of general applicability:

a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.

b. Pursuant to 35 IAC 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, except as allowed by 35 IAC 212.123(b) and 212.124.

2.2 General Non-Applicability of Regulations of Concern

2.2.1 PSD/NAA NSR

a. The Permittee has addressed the applicability of 40 CFR 52.21, PSD, and 35 IAC Part 203, Major Stationary Sources Construction and Modification (MSSCAM). The limits established by this permit are intended to ensure that the Cogeneration Boiler Project addressed in this construction permit does not constitute a major modification of the source pursuant to these rules (See also Condition 2.6 and Attachment 1). For the purpose of addressing whether this project is a major modification for emissions of particulate matter under MSSCAM, as US Steel did not provide separate $PM_{2.5}$ emission data for the project and given the netting analysis shows that project would not be accompanied by a significant net increase in emissions is conducted in terms of emissions of PM_{10}, the limits for emissions PM_{10} established by this permit are also applicable to emissions of $PM_{2.5}$.

2.3 General Work Practice Requirements

2.3.1 Operating Program

a. Pursuant to 35 IAC 212.309, emission units that are subject to a requirement in 35 IAC 212.304 through 212.308 or 212.316 shall be operated under the provisions of an operating program, consistent with the requirements set forth in 35 IAC 212.310 and 212.312, and prepared by the Permittee and submitted to the Illinois EPA for its review. Such operating program shall be designed to significantly reduce fugitive particulate matter emissions.

i. At a minimum the operating program shall include the information and elements specified by 35 IAC 212.310, including: (1) a detailed description of the best management practices utilized to control fugitive dust; (2) estimated frequency of application of dust suppressants by location; and (3) such other information as may be necessary to facilitate the Illinois EPA's review of the operating program.

ii. This program shall also identify the specific control measures as may be needed to ensure that certain emission units comply with the opacity limits of 35 IAC 212.316.

iii. Pursuant to 35 IAC 212.312, this operating program shall be amended from time to time by the Permittee so that the operating program is current. Such amendments shall be consistent with 35 IAC Part 212 Subpart K and shall be submitted to the Illinois EPA for its review.

2.4 General Recordkeeping Requirements

2.4.1 Retention and Availability of Records

a. All records and logs required by this permit shall be retained for at least five years from the date of entry (unless a longer retention period is specified by the particular recordkeeping provision herein), shall be kept at a location at the source that is readily accessible to the Illinois EPA or USEPA, and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request.

b. The Permittee shall retrieve and print, on paper during normal source office hours, any records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for records during the course of a source inspection.

2.5 General Reporting Requirements

2.5.1 Reporting and Notifications Associated with Emissions Tests

a. The Illinois EPA shall be notified prior to required emissions tests to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of 30 days prior to the expected testing date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.

b. At least 60 days prior to the actual date of required emissions testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing, including at a minimum:

i. The person(s) who will be performing sampling and analysis and their experience with similar tests.

ii. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the emission unit and any control equipment will be determined.

iii. The specific determinations of emissions and operation, which are intended to be made, including sampling and monitoring locations.

iv. The test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods.

v. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.

vi. Opacity observations during the period of testing.

c. Copies of the Final Reports(s) for required emissions tests shall be submitted to the Illinois EPA within 30 days after the test results are compiled and finalized. The Final Report shall include at a minimum:

i. A summary of results.

ii. General information.

iii. Description of test method(s), including description of sample points sampling train, analysis equipment, and test schedule.

iv. Detailed description of test conditions, including:

A. Process information.

B. Control equipment information, e.g., equipment condition and operating parameters during testing.

v. Data and calculations, including copies of all raw data sheets, opacity observation records and records of laboratory analyses, sample calculations, and data on equipment calibration.

2.5.2 Notification and Reporting of Deviations

a. Except as specified in a particular provision of this permit, notifications and reports for deviation from applicable requirements of this permit shall include at least the following information: the date and time of the event, a description of the event, information on the magnitude of the deviation, a description of the corrective measures taken, and a description of any preventative measures taken to prevent future occurrences.

2.6 Provisions for Existing Equipment

a. This permit relies upon the emissions decreases established by the Emission Reduction Projects (Construction Permit 06070022). For this purpose, existing Boilers 1 through 10 shall be permanently shut down within 180 days of the initial start up of the new cogeneration boiler or upon completion of shakedown of the boiler, whichever occurs first, unless the Illinois EPA authorizes an extended transition period between the cogeneration boiler and existing boilers to address the protracted shakedown of the new boiler, in which case the operation of the new and existing boilers during the extended transition period shall be coordinated so that their combined emissions do not exceed the annual emissions limits set by this permit for the cogeneration boiler.

b. This permit relies upon the planned permanent shutdown of the No. 6 Galvanizing Line. Once the line is permanently shutdown, restart of the line would require a construction permit from the Illinois EPA.

Note: The application indicates an annual decrease of 10.36 tons of CO, 38.48 tons of NO_x, 0.94 tons of PM/PM_{10}, 0.07 tons of SO_2, and 0.68 tons of VOM from the shutdown of No. 6 Galvanizing Line. These values represent the actual emissions attributable to natural gas combustion in No. 6 Galvanizing Line. As these changes are unrelated to the project, they are considered contemporaneous emission decreases as addressed in the Attachment to this permit.

c. This permit relies upon the planned permanent shutdown of the No. 4 COG Booster Pump (natural gas fired). This natural gas fired pump is being replaced by an electric pump.

Note: The application indicates an annual decrease of 117.97 tons of CO, 77.30 tons of NO_x, 0.64 tons of PM/PM_{10}, 0.02 tons of SO_2, and 0.99 tons of VOM from the shutdown of No. 4 COG Booster Pump (natural gas fired). These values represent the actual emissions attributable to natural gas combustion in the No. 4 COG Booster Pump (natural gas fired). As these changes are unrelated to the project, they are considered contemporaneous emission decreases as addressed in the attachment to this permit.

d. i. Emissions attributable to the combustion of natural gas associated with the blending station (Construction Permit 04110018) shall not exceed the following limits after the cogeneration boiler initially starts up. Compliance with the annual limits shall be determined from a running total of 12 months of data. This Condition supersedes Condition 3 of Construction Permit 04110018, issued February 4, 2005.

	Emissions	
Pollutant	(Tons/Month)	(Tons/Year)
NO_x	2.80	17.22
CO	0.84	5.17
PM	0.12	0.73
PM_{10}	0.11	0.62
VOM	0.06	0.34
SO_2	0.01	0.04

ii. The Permittee shall continue to comply with the other requirements of Construction Permit 04110018, including operational limitations, recordkeeping and reporting requirements.

2.7 Authorization to Operate

The new emission units addressed by this construction permit may be operated under this permit until they have been incorporated into the source's issued CAAPP permit, provided that the Permittee submits a timely and complete application for such CAAPP permit.

3.0 UNIT-SPECIFIC CONDITIONS FOR SPECIFIC EMISSION UNITS

3.1 Cogeneration Boiler

3.1.1 Description

Under the source's current configuration, twelve boilers at the source (Boilers 1-12) fire BFG as well as coke oven gas and natural gas. This project involves construction of a new cogeneration boiler and the shutdown of Boilers 1-10 (Also addressed by Emission Reduction Project, Construction Permit 06070022). BFG previously burned in Boilers 1-10 would be sent to the new cogeneration boiler under the proposed configuration.

The new boiler would be used for cogeneration, as it would supply high pressure steam to a steam turbine which would produce electricity for use at the source. Low-pressure steam from this turbine would then be used for manufacturing operations at the source.

The new boiler would be primarily fed with BFG; however, natural gas would be used for the pilot flame and also for combustion control.

3.1.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Cogeneration Boiler	BFG Boiler (nominal 505 mmBtu/hour capacity)	BFG Pre-Treatment System

3.1.3 Applicable Provisions and Regulations

a. The "affected unit" for the purpose of these unit-specific conditions, is the BFG Boiler described in Conditions 3.1.1 and 3.1.2.

3.1.3-1 Applicable Federal Emission Standards (40 CFR 60, Subpart Db)

The affected unit is subject to the NSPS for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60 Subpart Db.

Note: While the affected unit meets the applicability of 40 CFR Part 60 Subpart Db, it is not subject to the emission standards of this rule.

3.1.3-2 Applicable State Emission Standards (35 IAC Part 212)

a. The affected unit is subject to 35 IAC 212.122(a), which provides that no person shall cause or allow the emission of smoke or other particulate matter into the atmosphere from any fuel combustion emission unit for which

construction or modification commenced on or after April 14, 1972, with actual heat input greater than 73.2 MW (250 mmBtu/hour), having an opacity greater than 20 percent.

3.1.3-3 Applicable State Regulations (35 IAC Part 216)

a. The affected unit is subject to 35 IAC 216.121, which provides that no person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from a fuel combustion unit with a heat input capacity of 10 million Btu per hour or more to exceed 200 ppm, corrected to 50 percent excess air.

3.1.4 Non-Applicability of Regulations of Concern

a. The affected unit is not subject to the NSPS for Electric Utility Steam Generating Units (40 CFR 60, Subpart Da) because the affected unit is not an electric utility steam generating unit as the term is defined in 40 CFR 60.41Da.

b. The affected unit is not subject to 40 CFR 60, Subpart D because the affected unit meets the applicability requirements under 40 CFR 60.40b(a) [40 CFR 60.40b(j)].

c. The affected unit is not subject to the sulfur dioxide standards of 40 CFR 60, Subpart Db because the affected unit meets the exemption provided at 40 CFR 60.42b(k)(2).

d. The affected unit is not subject to the nitrogen oxides standards of 40 CFR 60, Subpart Db because the affected unit has an annual capacity factor for natural gas of 10 percent or less and is subject to a federally enforceable requirement that limits operation of the facility to an annual capacity factor of 10 percent or less for natural gas (See also Condition 3.1.6(a)).

e. The affected unit is not subject to the particulate matter standards of 40 CFR 60, Subpart Db because these standards do not apply to gaseous fuel boilers.

f. i. This permit is issued based on the affected unit not being subject to emission standards or other requirements pursuant to the NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD. This is because this NESHAP has been vacated by a court mandate, pursuant to a request by USEPA, and is no longer in effect.

Note: Had this rule not been vacated, the affected unit would have met the BFG fuel fired boiler exclusion at 40 CFR 63.7491(o). Incidentally,

"large gaseous fuel units," under this NESHAP would have been limited to CO emissions of no more than 400 ppm, dry basis at 3 percent oxygen, 30-day rolling average, excluding periods of startup, shutdown, malfunction, and low-load operation, which is less stringent than the standard set by 35 IAC 216.121 (See Condition 3.1.3-3).

ii. This permit is issued based on the affected unit not being a major source of HAPs for purposes of Section 112(g) of the Clean Air Act so that a case-by-case determination of Maximum Achievable Control Technology (MACT) is not required for the affected unit pursuant to Section 112(g) and 40 CFR 63 Subpart B. This is because the affected unit is being constructed at a developed site and the potential annual emissions of HAPs from the affected unit are less than 10 tons of any individual HAP and less than 25 tons of any combination of HAPs.

iii. The affected unit and the Permittee shall comply in a timely manner with all applicable provisions of a NESHAP adopted by USEPA or a case-by-case MACT determination made by the Illinois EPA that applies to the affected unit. For this purpose, the Permittee shall address the affected unit in an application submitted to the Illinois EPA pursuant to Section 112(j) of the Clean Air Act to support a case-by-case determination of MACT for the boilers at the source.

g. The affected unit is not subject to 35 IAC 217.121 because the affected unit is not fossil fuel-fired as defined by 35 IAC 211.2425.

3.1.5 Control Requirements and Work Practices

a. Emissions of PM and PM_{10} from the affected unit shall be controlled by the existing BFG pretreatment system, which entails treatment by dust catchers and wet scrubbers.

i. The PM content of the BFG burned in the affected unit shall not exceed 0.01 grains/dscf.

ii. Emissions of PM from the affected unit, as measured by USEPA Method 5, shall not exceed 0.03 lb/mmBtu of exhaust.

b. BFG and natural gas shall be the only fuels fired in the affected unit.

c. The affected unit shall be operated for the primary purpose of supplying steam and electricity to the source

with no more than 219,000 MW-hour of excess electricity sent to any utility power distribution system for sale in any calendar year from the electrical generator associated with the unit.

3.1.6 Production and Emission Limitations

a. i. A. The maximum design firing rate of the affected unit shall not exceed 505 mmBtu/hour.

B. The maximum design BFG input of the affected unit shall not exceed 476 mmBtu/hour.

ii. Fuel usage for the affected unit and the new BFG flare shall not exceed the following limits (rolling 12-month basis):

A. Natural gas: 341,666 mmBtu/year.

B. BFG and natural gas fuel usage combined: 4,511,426 mmBtu/year.

iii. Notwithstanding Condition 3.1.6(a)(ii)(A), above, the usage of natural gas for the affected unit and the new BFG flare, combined, shall not exceed 394,024 mmBtu/year, for the rolling 12-month periods that end in the months of November 2012 through June 2015. For example, the natural gas usage for these units, combined, for the 12-month period ending in November 2012 (which includes the months of December 2011 through November 2012) shall not exceed 394,024 mmBtu.

b. i. Emissions from the affected unit shall not exceed the following limits. Compliance with these limits shall be determined as a 3-hour average unless continuous emissions monitoring is conducted, in which compliance shall be determined as a daily average (24 operating hours):

Pollutant	Mode	
	BFG* (Lbs/mmBtu)	Natural Gas (Lbs/mmBtu)
NO_x	0.05	0.12
CO	0.15	0.0824
VOM	---	0.0054
PM/PM_{10}	0.101	0.0075
SO_2	0.20	0.0006
Indiv. Metal HAP	0.00066	0.00066
Total HAPs	0.0053	0.0053

* BFG mode entails firing a mix of BFG with up to 10 percent natural gas.

ii. Emissions from the affected unit and the new BFG flare shall not exceed the following limits:

Pollutant	Emissions	
	Tons/Month	Tons/Year
NO_x	12.5	124.74
CO	33.9	338.36
VOM	0.1	0.92
PM/PM_{10}	22.9	228.39
SO_2	45.2	451.14
Indiv. Metal HAP	0.2	1.5
Total HAPs	1.2	12.0

c. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total), unless otherwise specified in a particular condition.

3.1.7 Emissions Testing Requirements

a. Within 60 days after achieving the maximum production rate at which the affected unit will be operated, but not later than 180 days after initial startup of the affected unit, the Permittee shall conduct performance test(s) and furnish the Illinois EPA a written report of the results of such test(s).

b. i. These tests shall be designed to measure the NO_x, CO, SO_2, PM_{10}, PM and VOM emissions in BFG mode under conditions which are representative of maximum emissions.

ii. These tests shall also include measurements of emissions of metals if the Permittee elects to conduct emissions testing to verify compliance with the limits for metal HAPs, as an alternative to applying data for the metal HAP content of material collected during pretreatment of the BFG, as provided for by Condition 3.1.8-2(b).

c. The following USEPA test methods shall be used for testing of emissions, unless another method is approved by the Illinois EPA. Refer to 40 CFR 51, Appendix M, and 40 CFR 60, Appendix A, for test methods.

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3
Moisture	Method 4
SO_2	Method 6
NO_x	Method 7
CO	Method 10

PM_{10}	Methods 201A* & 202
PM	Method 5
VOM	Method 18 or 25A
Metals	Method 29

* The Permittee may also use Method 5 as an alternative to Method 201A, provided that the measured results shall be considered PM_{10}.

d. The Permittee shall submit a plan, notifications and a report for these emissions tests as required by Condition 2.5.1. For this purpose, in addition to other required information, the test report shall include data for the sulfur and PM content of BFG and the metals content of the material removed from raw BFG by the pretreatment system, as determined pursuant to Condition 3.1.8-2.

3.1.8-1 Emissions Monitoring Requirements

a. The Permittee shall install, calibrate, operate, and maintain NO_x and CO continuous monitoring system(s) on the affected unit within one year after the initial emission testing required by this permit unless this testing or further testing conducted by the Permittee demonstrates that the unit normally complies by a margin of at least 5 percent with the NO_x and CO emission limit in this permit or the Illinois EPA approves further time for the Permittee to achieve this level of performance.

b. i. These monitoring systems shall be operated during all periods of operation of the affected boiler except for continuous monitoring system maintenance, breakdowns and repairs.

ii. The Permittee shall maintain records for the continuous monitoring system, including recorded emission concentrations and records of maintenance, calibration, and operational activity associated with the system.

iii. The Permittee shall submit quarterly monitoring reports to the Illinois EPA for these emission monitoring system(s) in accordance with relevant reporting requirements of the NSPS for continuous emissions monitoring systems.

c. NO_x or CO continuous emission monitoring may be discontinued if a parametric monitoring plan is approved by the Illinois EPA in a revised construction permit or the operating permit for the plant.

d. The requirement for a NO_x or CO monitoring system may be revised or waived in the operating permit for the source if the Illinois EPA determines that compliance with

requirements for NO_x or CO emissions is not facilitated to a significant degree by such monitoring.

3.1.8-2 Analysis of Blast Furnace Gas (BFG)

a. The Permittee shall sample and analyze cleaned BFG after the pretreatment system for sulfur content (lbs/mmBtu), using appropriate ASTM methods or other comparable methodology. These measurements shall be conducted during the emission testing required by Condition 3.1.7 and on at least a quarterly basis thereafter. The records for this activity shall also include operating data for the blast furnaces and the BFG pretreatment system at the time of sampling.

b. The Permittee shall sample and analyze the cleaned BFG after the pretreatment system for PM content (gr/scf) and the material collected by the BFG pretreatment system for HAP metal content (by weight, dry basis, for individual metals as addressed by Method 29) using appropriate ASTM methods or other comparable methodology. These measurements shall be conducted during the emission testing required by Condition 3.1.7 and on at least a biennial basis thereafter. The records for this activity shall also include operating data for the blast furnaces and the BFG pretreatment system at the time of sampling. Unless testing for emissions of HAP metals is conducted in accordance with Condition 3.1.7(b)(ii), this data on the composition of collected material must be applied to data for PM emissions to calculate emissions of metals for purposes of verifying compliance with the emission limits in Condition 3.1.6 for HAP metals and HAPs.

3.1.9 Recordkeeping Requirements

a. The Permittee shall maintain the following records for the BFG pretreatment system:

   i. Records for pressure drop and water flow;

   ii. Operating log; and

   iii. Maintenance log.

b. The Permittee shall maintain the following emission records:

   i. A file which contains supporting documentation which demonstrates the maximum design firing rate of the affected unit (mmBtu/hour), the maximum design BFG input of the affected unit, and the manufacturer's guarantees for the emission rates of the natural gas burners in the affected unit.

ii. Amounts of fuel burned by type (mmBtu/month and mmBtu/year) for the affected unit.

iii. Emissions of NO_x, CO, VOM, PM/PM_{10}, SO_2 and HAPs (tons/month and tons/year) from the affected unit.

iv. Amounts of fuel burned for the affected unit and the new BFG flare, combined, by type (mmBtu/month and mmBtu/year).

v. Summation of the emissions of NO_x, CO, VOM, PM/PM_{10}, SO_2 and HAPs from the affected unit and the new BFG flare (tons/month and tons/year).

c. The Permittee shall comply with the applicable recordkeeping requirements of the NSPS, as specified in 40 CFR 60.7(b) and 60.49b.

d. The Permittee shall maintain records of the sulfur content of the fuels burned in the affected unit, including records for the sampling and analysis of BFG pursuant to Condition 3.1.8-2(a). Records may consist of copies of supplier specifications for the sulfur content of natural gas.

3.1.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of deviations of an affected unit with the permit requirements of this section (Section 3.1). Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

i. Emissions or operation of the affected unit in excess of the limits specified in Condition 3.1.6 shall be reported within 30 days of such occurrence.

ii. Other deviations shall be reported in a quarterly compliance report.

b. The Permittee shall comply with the applicable reporting requirements of the NSPS, as specified in 40 CFR 60.7 and 60.49b.

3.2 Flare

3.2.1 Description

A new BFG flare would be installed to safely combust excess BFG that cannot be productively used at the source as fuel. Although the primary disposition of BFG is the new cogeneration boiler, existing Boilers 11 and 12, and the blast furnace stoves, there may be periods of time when the existing BFG flare system is unable to handle all of the excess BFG (e.g., when the BFG boiler is down for maintenance). During these periods, the excess BFG would be routed to the new BFG flare.

3.2.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description
BFG Flare	New Blast Furnace Gas Flare

3.2.3 Applicable Provisions and Regulations

a. The "affected unit" for the purpose of these unit-specific conditions, is the flare described in Conditions 3.2.1 and 3.2.2.

b. The affected unit is subject to 35 IAC 214.301, which generally provides that no person shall cause or allow the emission of sulfur dioxide into the atmosphere from a process emission unit to exceed 2,000 ppm.

3.2.4 Non-Applicability of Regulations of Concern

Non-applicability of regulations of concern are not set for the affected unit.

3.2.5 Control Requirements and Work Practices

a. i. The affected unit shall be designed and operated to comply with the following equipment design specifications and work practices.

A. The affected unit shall be designed for flaring of BFG.

B. The affected unit shall be designed for and operated with no visible emissions as determined by the methods specified in 40 CFR 60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

C. The affected unit shall be operated with a flame present at all times when BFG may be sent to the affected unit.

D. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

ii. Emissions of PM and PM_{10} from the affected unit shall be controlled by the existing BFG pretreatment system, which entails treatment by dust catchers and wet scrubbers.

iii. BFG and natural gas shall be the only fuels combusted in the affected unit.

b. The Permittee shall not vent any gas stream containing reduced sulfur compound concentrations to the affected unit that would cause the sulfur dioxide emissions into the atmosphere from any affected unit to exceed 2,000 ppm. This limit ensures that the affected unit meets the emission limit in 35 IAC 214.301.

3.2.6 Production and Emission Limitations

a. The affected unit is subject to limitations addressing emissions from both the BFG Boiler and the affected unit set forth in Condition 3.1.6.

3.2.7 Testing Requirements

a. Within 180 days after initial startup of the affected unit or otherwise the first opportunity during normal working hours of environmental staff when the unit is operated for a period of at least 10 daylight hours, the Permittee shall conduct observations for visible emissions from the affected unit and furnish the Illinois EPA a written report of the results of such test(s).

b. The test shall be designed to measure the presence of visible emissions from the affected unit.

c. The Permittee shall submit reports for these tests as required by Condition 2.5.1(c).

3.2.8 Monitoring Requirements

a. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

3.2.9 Recordkeeping Requirements

a. The Permittee shall maintain records of the following items related to the pilot flame:

i. Date and duration of any time when the pilot flame monitoring equipment of the affected unit was not in operation, with explanation.

ii. Date and duration of any time when there was no pilot flame present at the affected unit, with explanation.

iii. The Permittee shall maintain records of the following items for each exceedance of the limits in Conditions 3.2.3, 3.2.5, or 3.1.6, which shall include:

A. Identification of the limit that may have been exceeded.

B. Duration of the possible exceedance.

C. An estimate of the amount of emissions in excess of the applicable standard.

D. A description of the cause of the possible exceedance.

E. When compliance was reestablished.

b. The Permittee shall maintain records of the following items for the affected unit:

i. Amount of gas burned by type (mmBtu/month and mmBtu/year).

ii. Emissions of NO_x, CO, VOM, PM/PM_{10}, and SO_2 (tons/month and tons/year).

3.2.10 Reporting Requirements

a. Reporting of Deviations

The Permittee shall promptly notify the Illinois EPA of deviations of the affected unit with the permit requirements of this section (Section 3.2). Reports shall include information specified in Condition 3.2.10(a)(i).

i. Within 30 days of exceedance of the limits in Conditions 3.2.3 and 3.2.5 the notification shall include:

A. Identification of the limit that may have been exceeded.

B. Duration of the possible exceedance.

C. An estimate of the amount of emissions in excess of the applicable standard.

D. A description of the cause of the possible exceedance.

E. When compliance was reestablished.

ii. Other deviations shall be reported in a quarterly compliance report.

3.3 Cooling Water Tower

3.3.1 Description

A cooling tower would be installed with the new cogeneration boiler and associated turbine.

The cooling tower would be a source of particulate matter because of minerals contained in the water, which would be emitted if a water droplet completely evaporates in the cooling tower.

3.3.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Cooling Tower	Provides cool water to condense steam.	Drift Eliminator

3.3.3 Applicable Provisions and Regulations

a. An "affected unit" for the purpose of these unit-specific conditions is a cooling water tower described in Conditions 3.3.1 and 3.3.2.

b. Pursuant to 40 CFR 63.402, the Permittee shall not use chromium-based water treatment chemicals in the affected unit.

3.3.4 Non-Applicability of Regulations of Concern

a. The affected unit is not subject to 35 IAC 219.986(d), because the cooling tower does not cool process water.

3.3.5 Control Requirements and Work Practices

a. The design drift loss from the drift eliminator on the affected unit shall not exceed 0.001 percent.

3.3.6 Production and Emission Limitations

a. i. The capacity of the affected unit, expressed in terms of design water circulation rate, shall not exceed 42,000 gallons per minute, hourly average.

ii. The total dissolved solids content of water circulating in the affected unit shall not exceed 4,190 ppm on a monthly basis.

b. Emissions of PM/PM_{10} from the affected unit shall not exceed 0.39 tons/month and 3.86 tons/year. Compliance with the annual limit shall be determined from a running total of 12 months of data.

3.3.7 Sampling and Analysis

a. The Permittee shall sample and analyze the water being circulated in the affected unit on at least a monthly basis for the total dissolved solids content.

b. Upon written request by the Illinois EPA, the Permittee shall promptly have the water circulating in the affected unit sampled and analyzed for the presence of hexavalent chromium in accordance with the procedures of 40 CFR 63.404(a) and (b).

c. The Permittee shall keep records for this sampling and analysis activity, including documentation for sampling and analysis as well the resulting data that is collected.

3.3.8 Monitoring Requirements

a. Upon written request by the Illinois EPA, the Permittee shall test the percent drift achieved by the drift eliminator pursuant to Cooling Technology Institute's Acceptance Test Code No. 140 or other appropriate procedure approved by the Illinois EPA. This test shall be performed by a licensed performance testing service.

3.3.9 Recordkeeping Requirements

a. The Permittee shall keep records of the capacity (gallons/minute, hourly average) and the design maximum drift loss rate of the affected unit with supporting documentation.

b. The Permittee shall keep records of emissions of PM/PM_{10}, with supporting calculations (tons/month and tons/year).

3.3.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of deviations of the affected unit with the permit requirements of this section (Section 3.3). Reports shall include information specified in Condition 3.3.10(a).

a. Emissions or operation of the affected unit in excess of the limits specified in Condition 3.3.6 within 30 days of such occurrence.

4.0 ATTACHMENTS

Attachment 1: Netting Analysis (Tons/Year)

	Date	NO_x (NA NSR)	NO_x (PSD)	CO	SO_2	VOM	PM	$PM_{10}/PM_{2.5}$	Lead	H_2SO_4
Project Emissions		124.74	124.74	338.36	451.14	0.92	232.25	232.25	---	---
Significance Threshold:		40	40	100	40	40	25	15	0.6	7
Greater Than Significant?		Yes	Yes	Yes	Yes	No	Yes	Yes	No	No
Contemporaneous[a] Increases										
NG Enrichment (04110018)	2/2005	17.22	17.22	5.17	0.04	0.34	0.73	0.62	---	---
Slab Furnaces (06070022)		---	---	26.77	---	1.75	43.43	43.43	---	---
Contemporaneous[a] Decreases										
Boilers 1 thru 10 (06070022)	[b]	-278.89	-278.89	-313.61	-789.43	-1.22	-228.06	-228.06	---	---
COG Desulf (06070022)	[b]	---	---	---	-2,107.95	---	-94.15	-94.15	---	-63.11
Slab Furnaces (06070022)	[b]	-427.94	-427.94	---	-174.15	---	---	---	---	---
No. 6 Galv. Line (06070023)	[b]	-38.48	-38.48	-10.36	-0.07	-0.68	-0.94	-0.94	---	---
No. 4 COG Pump (06070023)	[b]	-77.30	-77.30	-117.97	-0.02	-0.99	-0.64	-0.64	---	---
NET EMISSIONS CHANGE		-680.65	-680.65	-71.64	-2,620.44	0.12	-47.38	-47.49	---	-63.11
Significance Threshold:		40	40	100	40	40	25	15	0.6	7
Greater Than Significant?		No	No	No	No	No	No	No	No	No

Notes:

a. Based on the projected date for initial startup of the proposed cogeneration boiler, the contemporaneous time period for PSD pollutants is April 2002 through July 2008. The contemporaneous time period for NA NSR pollutants is July 2001 through July 2008.

b. Future emissions decrease. The decrease in emissions from existing Boilers 1 thru 10, which the project replaces, will begin when the new boiler initially starts up diverting BFG from the existing boilers and will be complete after the shakedown and any transition period for the new boiler, when the existing boilers must be permanently shut down.

Attachment 2: Standard Permit Conditions

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) authorizes the Environmental Protection Agency to impose conditions on permits, which it issues.

The following conditions are applicable unless superseded by special condition(s).

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year from the date of issuance, unless a continuous program of construction or development on this project has started by such time.

2. The construction or development covered by this permit shall be done in compliance with applicable provisions of the Illinois Environmental Protection Act and Regulations adopted by the Illinois Pollution Control Board.

3. There shall be no deviations from the approved plans and specifications unless a written request for modification, along with plans and specifications as required, shall have been submitted to the Illinois EPA and a supplemental written permit issued.

4. The Permittee shall allow any duly authorized agent of the Illinois EPA upon the presentation of credentials, at reasonable times:

    a. To enter the Permittee's property where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit,

    b. To have access to and to copy any records required to be kept under the terms and conditions of this permit,

    c. To inspect, including during any hours of operation of equipment constructed or operated under this permit, such equipment and any equipment required to be kept, used, operated, calibrated and maintained under this permit,

    d. To obtain and remove samples of any discharge or emissions of pollutants, and

    e. To enter and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:

   a. Shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located,

   b. Does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities.

   c. Does not release the Permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations.

   d. Does not take into consideration or attest to the structural stability of any units or parts of the project, and

   e. In no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.

6a. Unless a joint construction/operation permit has been issued, a permit for operation shall be obtained from the Illinois EPA before the equipment covered by this permit is placed into operation.

 b. For purposes of shakedown and testing, unless otherwise specified by a special permit condition, the equipment covered under this permit may be operated for a period not to exceed thirty (30) days.

7. The Illinois EPA may file a complaint with the Board for modification, suspension or revocation of a permit.

   a. Upon discovery that the permit application contained misrepresentations, misinformation or false statement or that all relevant facts were not disclosed, or

   b. Upon finding that any standard or special conditions have been violated, or

   c. Upon any violations of the Environmental Protection Act or any regulation effective thereunder as a result of the construction or development authorized by this permit.

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